Installation Operation Maintenance

Whole House Air Cleaner Upgrade Kit

Upflow Furnace Models	*Downflow Furnace Models*	*Air Handler Models*
*FD145ALUPGRDC	*FD14DALUPGRDC	*FD215ALUPGRDC
*FD175ALUPGRDC	*FD17DALUPGRDC	*FD235ALUPGRDC
*FD210ALUPGRDC	*FD21DALUPGRDC	*FD260ALUPGRDC
*FD245ALUPGRDC	*FD24DALUPGRDC	*May be "A" or "T"

ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

IMPORTANT — This Document is **customer property** and is to remain with this unit.
Please return to service information pack upon completion of work.

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⚠ WARNING

RISK OF ELECTRIC SHOCK: These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in these operating instructions unless you are qualified to do so.

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⚠ WARNING

This information is for use by individuals having adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

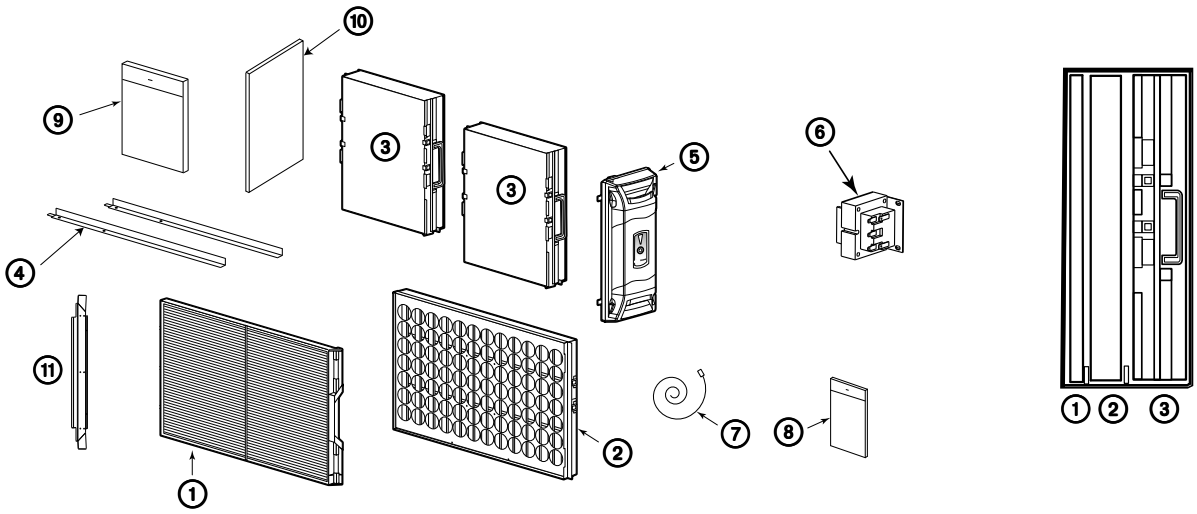


Figure 1 Components of the Air Cleaner Upgrade Kit

Unpack the Air Cleaner and check to make sure all components are included. They consist of:

1) **PRE-FILTER** - traps large particles such as hair and lint before they can enter the cell section.
2) **FIELD CHARGER** - charges the contaminants. **Only to be removed, cleaned or serviced by a qualified technician.**
3) **COLLECTION CELL (2)** - removes and collects small impurities from the air.
4) **FILTER MOUNT RAIL (2)** - mounts into existing cabinet and is used to hold the filter components in place. Rail is also used to activate the safety power switch.
5) **POWER DOOR** - the solid state power supply components that convert the 24 Volt AC to the high-voltage, direct current required to power the FIELD CHARGER and COLLECTION CELLS. Allows access to the COLLECTION CELLS, FIELD CHARGER and PRE-FILTER.
6) **TRANSFORMER** - supplies 24 Volts to the indoor unit and air cleaner.
7) **24 VOLT POWER/ CONTROL CABLE**
8) **GASKET, LITERATURE AND HARDWARE PACKET**
9) **TEMPLATE, BLUNT TIP SCREWS AND DRILL BIT KIT** - used to mount rails.
10) **INSULATOR FILM** - supplied with 3 different thicknesses.
11) **UPFLOW AIR HANDLER BAFFLE** - This baffle is only included with Air Handler models.

Check carefully for any shipping damage. This must be reported to and claims made against the transportation company immediately. Check to be sure all major components are in the unit. Any missing parts should be reported to your supplier at once, and replaced with authorized parts only.

A. DUCT SUPPORT INSTALLATION

⚠ CAUTION

SAFETY HAZARD
Sharp Edge Hazard. Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing. Personal injury may result.

Step 1: Review the figures below and determine which one looks like your application.

Step 2: To prevent racking of the air cleaner, support duct per the illustration.

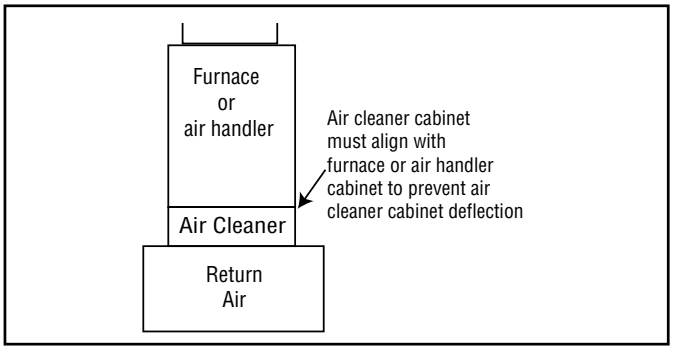


Figure 2

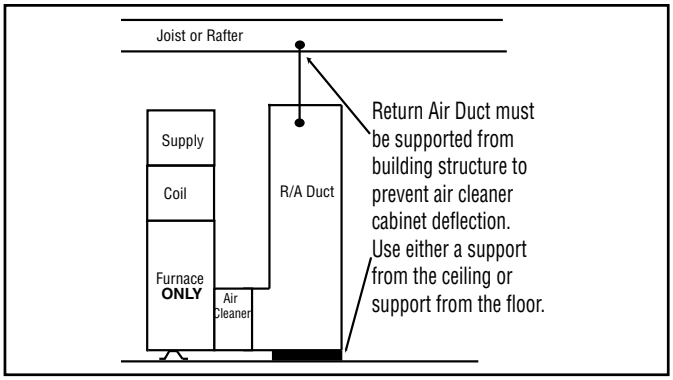

Joist or Rafter
Supply
Coil
Furnace
ONLY
Air
Cleaner
R/A Duct
Return Air Duct must be supported from building structure to prevent air cleaner cabinet deflection. Use either a support from the ceiling or support from the floor.

Figure 3

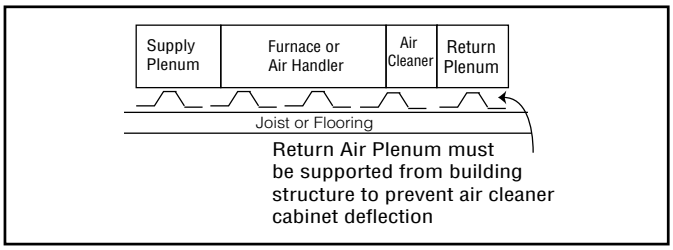


Figure 4

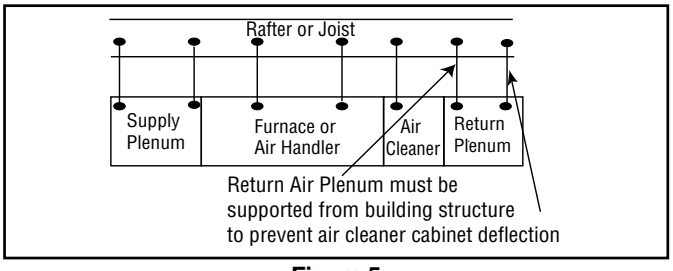


Figure 5

B. APPLICATION INFORMATION

NOTE: Do NOT install the air filter in the discharge air stream of either the heating or cooling unit.

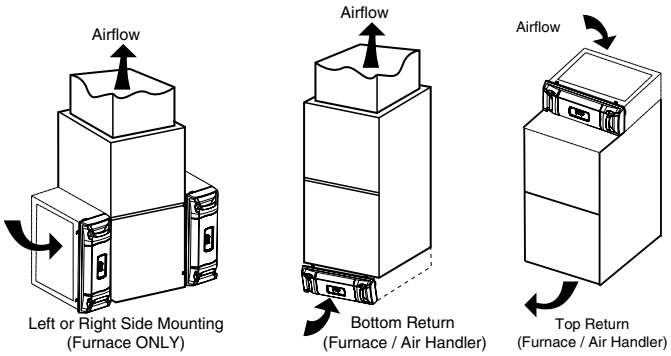


Figure 6 Mounting Location of Air Cleaner

⚠ CAUTION

Do NOT install air cleaner where the filter can be exposed to UV light. UV light can cause the plastic material to deteriorate, which may lead to filter damage.

This air cleaner cabinet must be mounted in the return air duct of a central forced-air furnace/air handler.

Select a location that meets the following:

1. The face of the cell must be at a right angle to the air stream.
2. Allow a minimum of 28 inches clearance in front of the air cleaner to permit removal of cells and Pre-Filter.
3. **Flow-through Bypass Humidifiers**
   Excessive bypass air may cause water blow-off, which will adversely affect system operation and air cleaner performance. To verify bypass airflow, follow the Bypass Humidifier Pre-Installation Checkout and Set-Up Procedures available through your local distributor. Ask for publication number 18-CH37D1-1.

   Steam and Flow-through Fan Power Duct-mounted Humidifiers
   Follow the humidifier installation instructions. These should only be installed on the supply air side of the system.

   Other Duct Mounted Humidifiers
   Not recommended for installation with the air cleaner.

⚠ CAUTION

Do NOT operate the air cleaner during construction or remodeling of a home. The air cleaner is designed for use in normal living conditions to capture small particles. The volume of dust and condensate in the presence of chlorides and fluorides from paint, varnish, stains, adhesives, cleaning compounds, and cement creates a corrosive condition which may cause rapid deterioration of the cabinet and internal components of the air cleaner and the air handler/ furnace.

⚠ WARNING

Hazardous Voltage!
Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/ tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

C. DOOR OPERATION

The upgrade kit comes with a new power door. Read the following instructions to familiarize yourself with how to remove and install the new door.

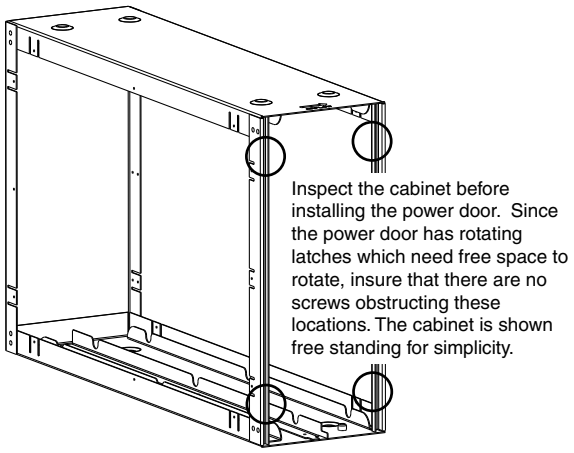

Inspect the cabinet before installing the power door. Since the power door has rotating latches which need free space to rotate, insure that there are no screws obstructing these locations. The cabinet is shown free standing for simplicity.

Figure 7 Avoiding Screw Interference

REMOVING THE POWER DOOR:

Step 1: To remove the door, hold handles and rotate latches as shown in Figure 8.

⚠ CAUTION

Handle the door only by using the handles on the front of the door. Grasp the door by the handles as depicted in Figure 8 to remove and replace the door. Do not handle the door on the edges. Metal edges may be sharp and could result in injury if the door is not handled properly.

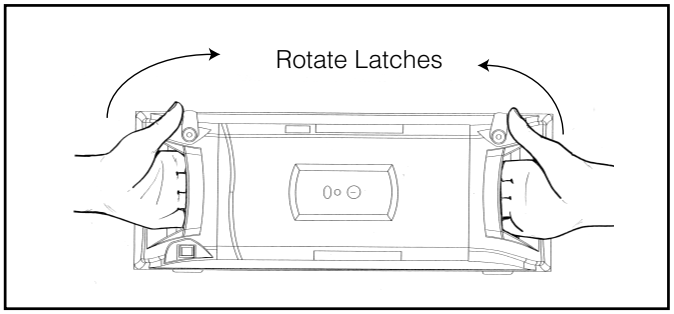


Figure 8 Removal of Door

Step 2: Rotate the door to fully remove from the air cleaner. See Figure 9.

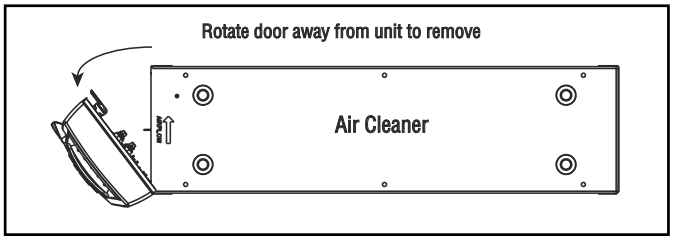


Figure 9 Rotate the Door

REINSTALLING THE POWER DOOR:

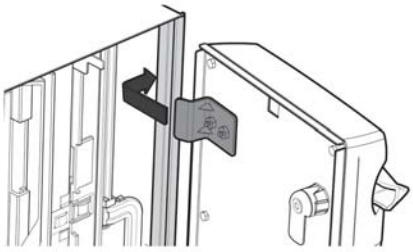


Figure 10 Aligning Door

Hold door so that it is aligned with the cabinet.

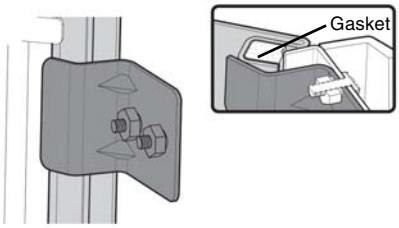


Figure 11 Aligning Door Tabs

Insert tabs behind the cabinet rail. Edge of door should fit into channel against gasket. (See detail)

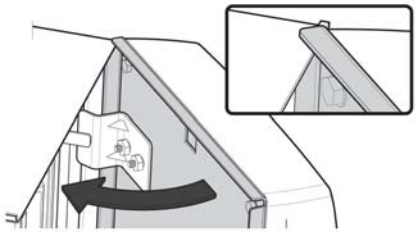


Figure 12 Rotating Door Closed

Rotate door to closed position. Ensure ends of door overlap cabinet. (See detail)

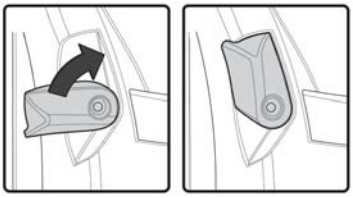


Figure 13 Door Latch Detail

Rotate latches to secure door.

D. INSTALLATION GUIDELINES

NOTE: For Non-TFE models, skip the section below and go to the next page.

TFE MODELS ONLY -

Remove Existing Electrical Hardware:

Identify the existing air cleaner located in the return air duct of a central forced-air furnace/air handler. The air cleaner is typically installed as shown in Figure 6.

FURNACE AND AIR HANDLER ***- (120 VAC models):***
If the existing air cleaner is an electronic type Perfect Fit™ air cleaner filter (EAC), switch the POWER button to the "OFF" position. All furnace applications, and some air handler applications use 120 VAC 3 prong power cord. This should be unplugged from the electrical outlet.

AIR HANDLER ***- (240 VAC models):***
If the EAC is internally wired into the air handler, the power cord and polarized connector adapter will need to be removed from the air handler system.

1. Disconnect the strain relief connector. See Figure 14 to the right.
2. Remove the six pin polarized connector on the adapter located between the female polarized connector on the heater and the male polarized connector from the air handler control box. See Figure 14.
3. Reconnect the female polarized connector on the heater and the male polarized connector from the air handler control box.
4. Disconnect the green ground wire on the plug adapter from the heater barrier.
5. Seal the knockout used by the previous power wires.

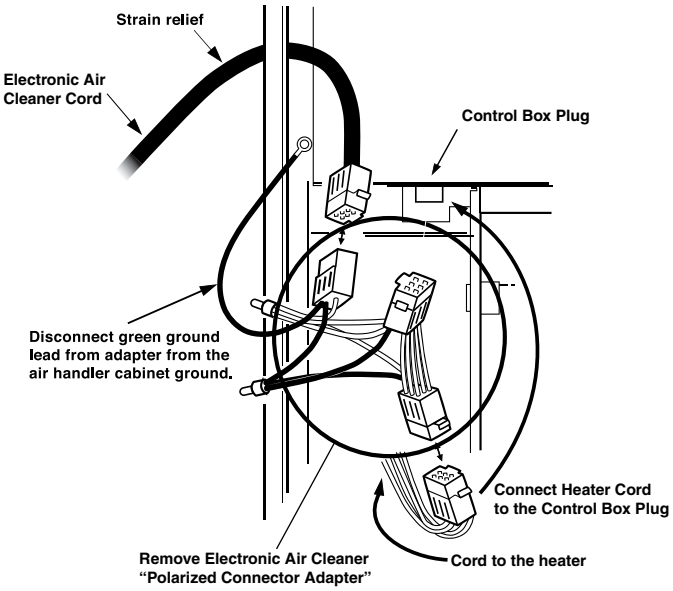

Strain relief
Electronic Air Cleaner Cord
Control Box Plug
Disconnect green ground lead from adapter from the air handler cabinet ground.
Connect Heater Cord to the Control Box Plug
Remove Electronic Air Cleaner "Polarized Connector Adapter"
Cord to the heater

Figure 14 TFE Wiring

INSTALLATION OF THE FILTER MOUNT RAILS

Remove all existing filters and PRE-FILTERs from the air cleaner enclosure and discard.

1. Identify the installation template from the upgrade kit packaging. See Figure 15. Install the template onto the air cleaner enclosure.

NOTE: The template must be pushed towards the back of the air cleaner enclosure until the front flange of the installation template is fully seated against the leading edge on the enclosure. The template must also be pushed towards the one inch U-channel rail as shown in Figure 16. If the template is improperly used, the filter components will not fit into the air cleaner enclosure correctly.

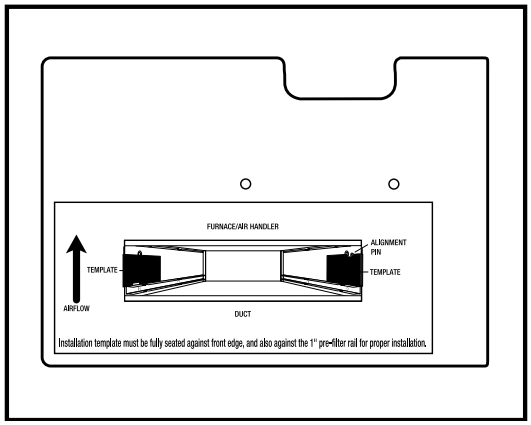


Figure 15 Template

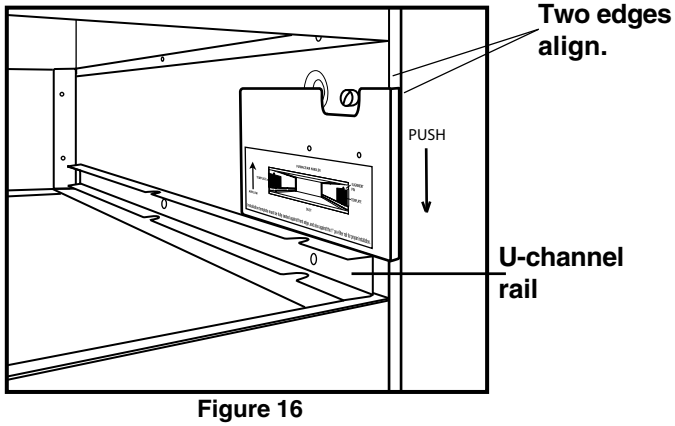


Figure 16

2. Leaving the template in place to prevent the drill bit from “walking”, use the provided drill bit to drill two holes in the air cleaner enclosure. Do not try to mark and then drill the holes, because the drill bit will have the tendency to “walk” on the flat sheet metal case. This will cause the metal rail to be installed incorrectly. See Figure 17.

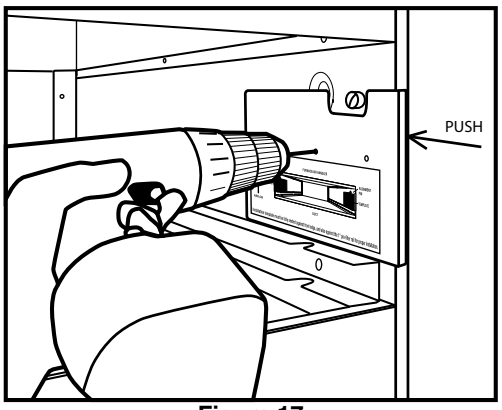


Figure 17

3. Use the provided blunt tip screws to fasten the rail into place. The metal tabs on the rails should be facing the front of the air cleaner enclosure. After installation, one of the tabs will be flush with the front of the enclosure and the other will extend past the front edge of the enclosure. See Figure 18.

4. With the rail now firmly affixed to the air cleaner case with two screws, it may be desirable to add an optional third screw on the rail for extra support. A third hole is provided for this purpose, as well as a screw. To prevent the drill bit from ‘walking’ use the existing hole located in the center of the rail as a guide (much like the installation template was used earlier).

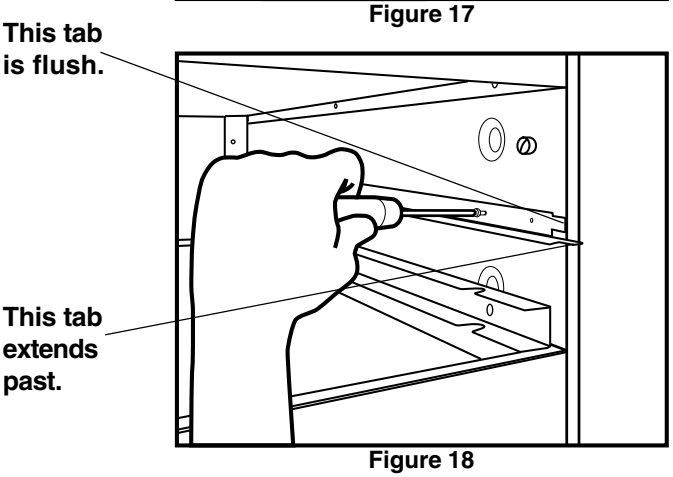


Figure 18

5. Move the installation template to the other side of the air cleaner enclosure. Place the template onto the enclosure as indicated in Figure 19. The template must be pushed towards the back of the air cleaner enclosure until the front flange of the installation template is fully flush against the leading edge on the case. The template must also be pushed towards the one inch U-channel rail as shown in Figure 19.

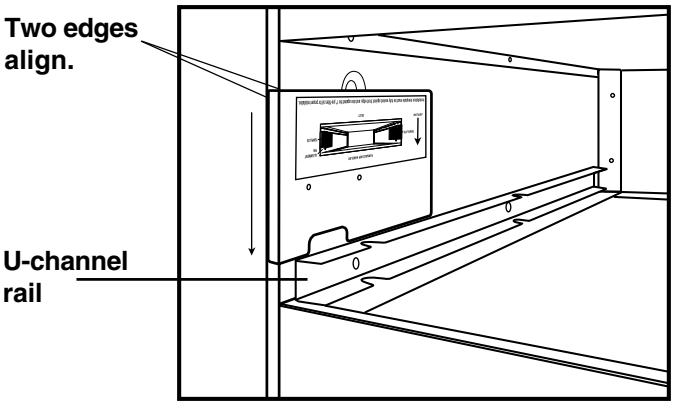


Figure 19

6. Drill two holes, using the template to guide the drill bit to keep the bit from 'walking' as done previously. See Figure 20.

NOTE: The filter mount rails are not installed in the same orientation. If they are installed the same way, the screw heads will be in the way of the filter installation.

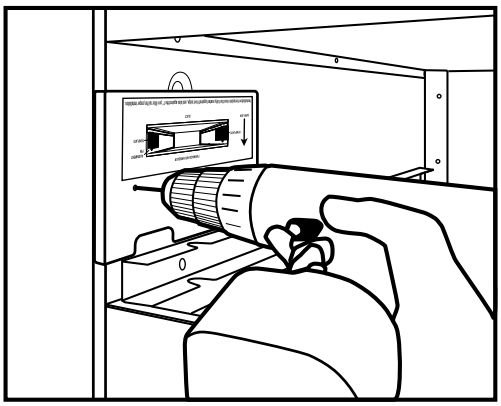


Figure 20

7. Secure the second rail into place using the provided blunt tip screws. The metal tabs should be facing the front of the air cleaner enclosure. One of the tabs should be flush with the front of the enclosure and the other will extend past the front of the enclosure. See Figure 21.

8. With the rail now firmly affixed to the air cleaner enclosure with two screws, it may be desirable to add an optional third screw on this rail for extra support. A third hole is provided for this purpose, as well as a screw. Use the existing hole located in the center of the rail as a guide much like the installation template was used earlier to prevent the drill bit from walking.

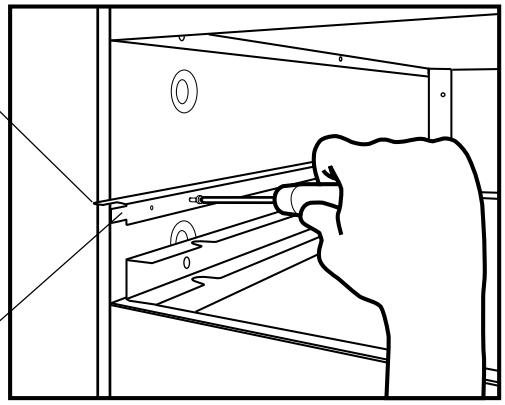


Figure 21

UPFLOW AIR HANDLER APPLICATIONS ONLY

NOTE: The upflow air handler baffle is required to protect the air cleaner in the event of a drain pan overflow. This baffle is required for all upflow air handler installations.

9. Remove any existing screws (at the rear of the assembly) that attach the air cleaner cabinet to the air handler cabinet. Position the baffle into the air cleaner rails as indicated in Figure 22 which shows the air cleaner/air handler assembly from the bottom. The baffle should be positioned on the leaving air side of the air cleaner cabinet opposite the power door. Ensure that the bracket is located correctly inside the air cleaner enclosure so that the baffle or screws do not interfere with the filter cell installation. (See the inset in Figure 23.)

10. Screw baffle into place using either the existing holes or by creating new holes with the self tapping screws. The screws should go through the baffle and the top of the air cleaner cabinet and into the air handler cabinet. OPTIONAL: Two holes have also been provided to attach the bracket to the side of the air cleaner cabinet as noted in Figures 22 and 23.

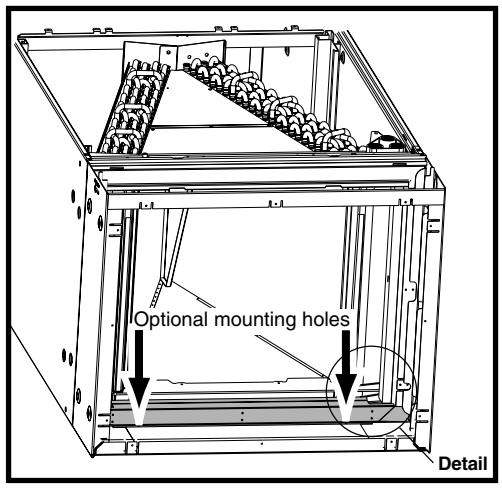


Figure 22

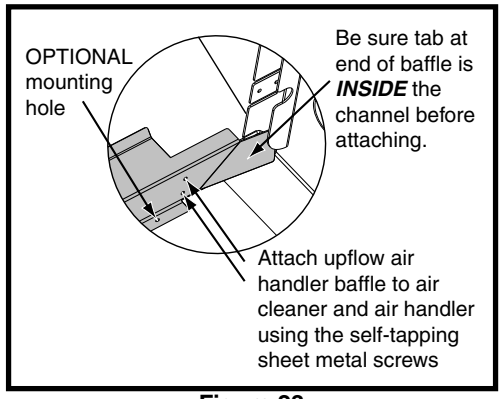

OPTIONAL mounting hole
Be sure tab at end of baffle is INSIDE the channel before attaching.
Attach upflow air handler baffle to air cleaner and air handler using the self-tapping sheet metal screws

Figure 23

INSTALLATION OF THE INSULATION SPACER

Perfect Fit™ air cleaner cabinets installed in homes may be dimensionally different from the cabinets currently produced. Therefore, it is necessary to use the enclosed gauge and follow these steps listed to determine which insulation spacer to use in each home installation. See Figure 24.

11. Place Field Charger into cabinet in correct location.

NOTE: Do NOT lock the Field Charger into place by bending locking tab on the cabinet.

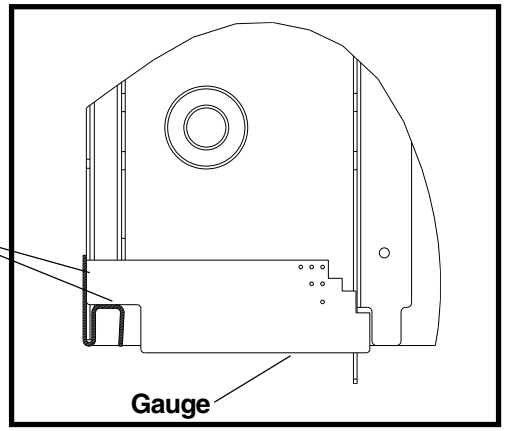


Figure 24

12. Use Gauge to determine which insulation spacer to install by placing gauge in cabinet as shown in Figures 25 through 27. Read the gauge by viewing where the flat of the Field Charger contact falls on a step. See Figure 27.

NOTE: The gauge must align with the cabinet per Figure 26. The gauge must be in the same plane as the Field Charger contact to be able to read it properly.

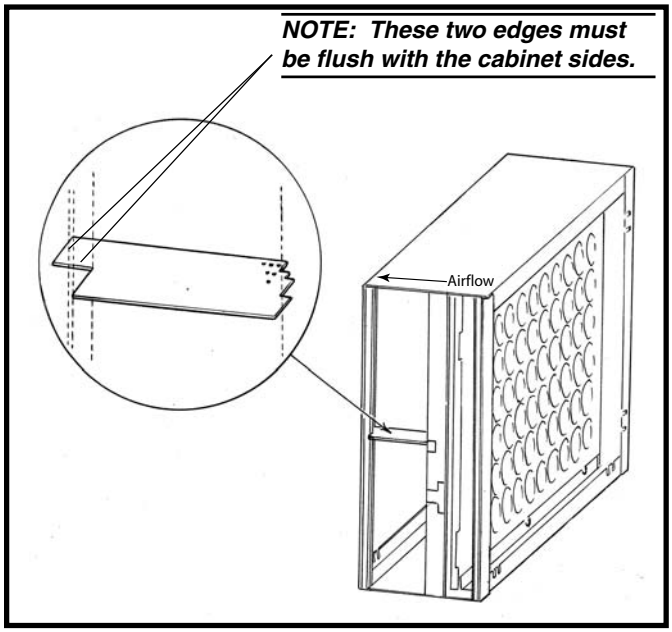


Figure 25

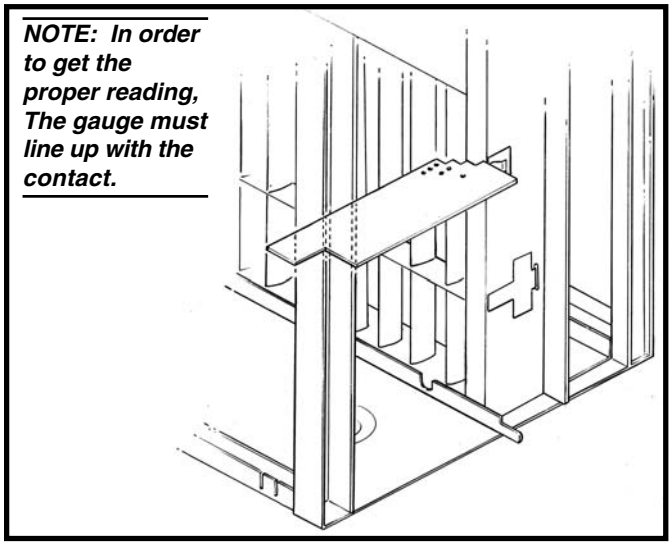


Figure 26

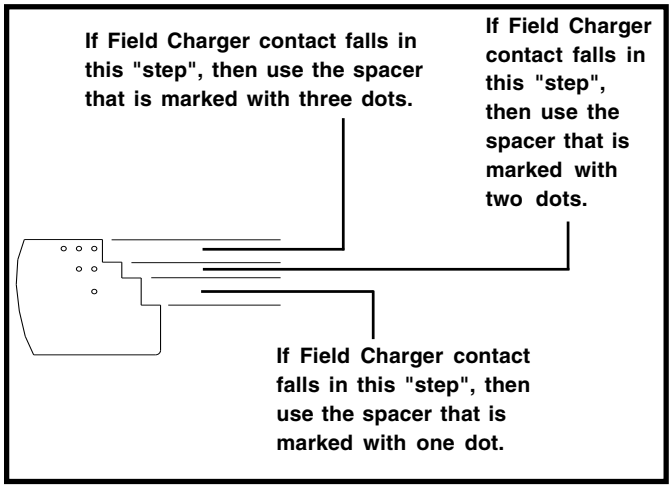

If Field Charger contact falls in this "step", then use the spacer that is marked with three dots.
If Field Charger contact falls in this "step", then use the spacer that is marked with two dots.
If Field Charger contact falls in this "step", then use the spacer that is marked with one dot.

Figure 27

13. Remove Field Charger from the cabinet.

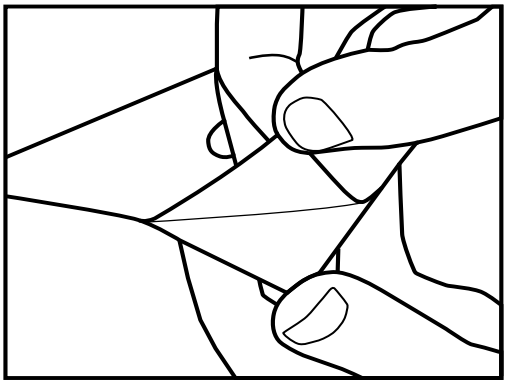


Figure 28

14. Clean the back of the existing cabinet to insure that it is dust free before adhering the new insulation spacer.

15. Install the proper insulation spacer determined in Figure 27, by peeling the paper off and pushing the spacer in place. See Figures 28 and 29. Center the insulator on the back wall against the cabinet flange closest to the indoor unit. Press the insulator film against the back wall to secure.

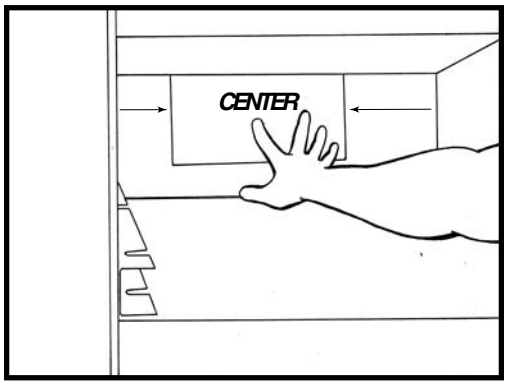


Figure 29

16. Place Field Charger into cabinet. Re-check with gauge to ensure Field Charger falls into the range indicated with 1 dot. (Review Figure 27).

Figure 30

17. Install the PRE-FILTER and COLLECTION CELLS.

18. Each COLLECTION CELL must be oriented with the handles toward the front.

Figure 31

19. Remove Model number/Serial number label from the kit and place on the bracket as shown in Figures 30 and 31.

Note: Pictured enclosure is not installed on a furnace.

20. Measure and cut the provided gasket to the length of the gasket channel as shown in Figure 32. Place gasket material into the two channels located at each side of the opening as shown in Figure 32.

Figure 32

21. Install the Power Door. The door can be installed in **either direction**. Determine which direction will best allow access to the latches and 24 Volt power cord. Insert the 2 tabs on the door behind the front cabinet flange and rotate the door into the closed position. Rotate the two quarter-turn latches on the Power Door inward. See Figures 33, 34 and 35.

    After final checkout of the Upgrade Kit, remove door and lock Field Charger into place.

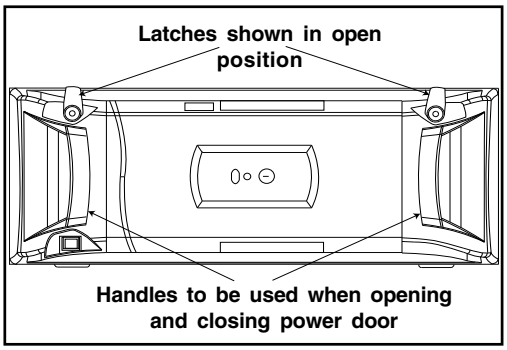


Figure 33

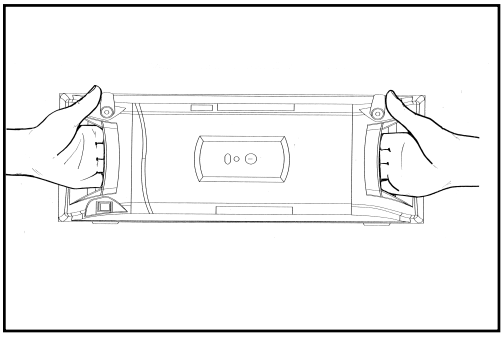


Figure 34

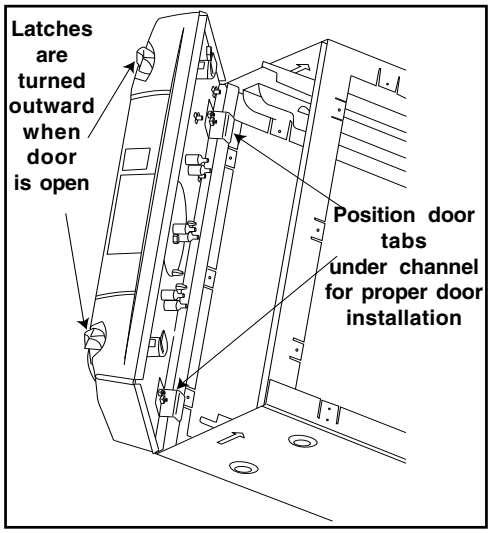


Figure 35

NOTE: Make sure to bend the locking tab that will hold the Field Charger in place. Do NOT bend the locking tab that would prevent removal of Collection Cells. See Figure 36.

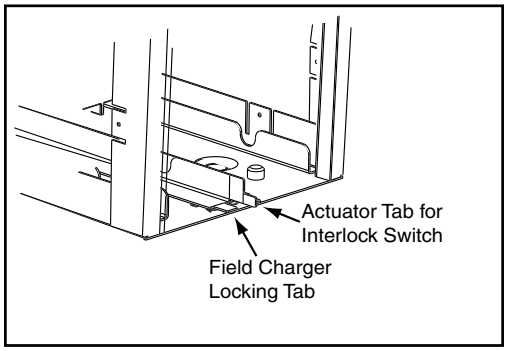


Figure 36

22. Complete Electrical Connection (Section E) and Air Cleaner Operation and Set Up (Section F).

NOTE: The door has a safety switch to ensure power is interrupted when the door is removed. This switch is open when the door is removed from the cabinet. When the door is properly installed, an actuator tab located in the cabinet will close the switch, allowing power to the electronics.

23. Cover the exposed screw tips on the outside of the cabinet. Locate the six 1-1/4" foam disc pads from the hardware packet and apply them over the screw tips on the outside of the cabinet. This will protect the homeowner from any contact with these screw tips. See Figure 37.

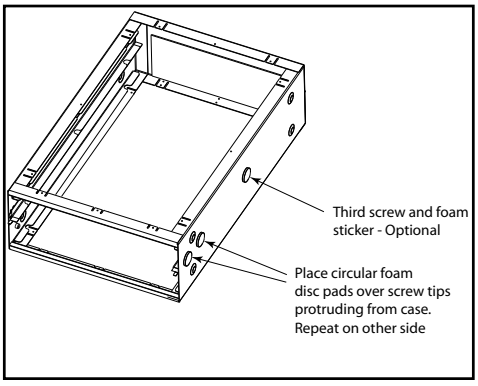


Figure 37

NOTE: Failure to cover the exposed screw tips on the outside of the cabinet could result in scrapes and cuts.

24. Demonstrate to homeowner Maintenance (Section H) and Door Operation (Section C).

E. ELECTRICAL CONNECTIONS

The air cleaner requires 24 VAC power and indoor fan signal to operate. A transformer adequately sized to power both the system and air cleaner is provided with the air cleaner. Remove the transformer in the indoor unit and replace with the transformer provided.

NOTE: A 50 VA transformer is required for Trane/ American Standard Heating & Air Conditioning furnace applications and 75 VA required for Trane/ American Standard Heating & Air Conditioning air handler applications. If the indoor air handler already has a properly sized transformer, no replacement is required.

NOTE: Trane/American Standard Heating & Air Conditioning dual circuited air handlers matched with heat pumps and Trane/American Standard Heating & Air Conditioning oil furnaces will require an accessory Transformer KIT# BAYTRANS12024◆ to power the air cleaner. Do NOT replace air handler transformer with the transformer supplied with the air cleaner.

NOTE: Provide adequate strain relief for the low voltage cable at the indoor unit.

NOTE: Wiring penetration must be sealed.

⚠ CAUTION

<u>DO NOT</u> attach the power/control cable to a 120 Volt EAC tap. The air cleaner uses 24 Volt power. Failure to use 24 VAC results in permanent damage to the air cleaner.

- Plug the air cleaner power/control cable into the air cleaner door and route the cable into the indoor unit low voltage wiring location.
- Connect the power/control wiring per Figure 38.

NOTE: For non-Trane/American Standard Heating & Air Conditioning systems order a 120 VAC to 24 VAC transformer, KIT# BAYTRANS12024◆ to provide 24 volt power only to the air cleaner. Access to 120 VAC outlet is required.

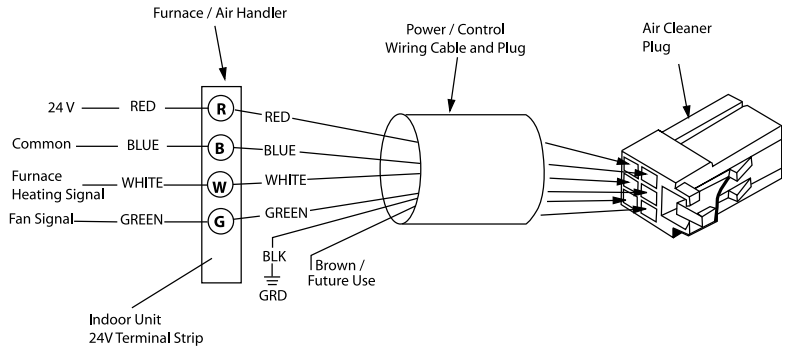
- Connect the power/control wiring per Figure 39.

NOTE: Trane/American Standard Heating & Air Conditioning Communicating Furnaces require KIT # BAYACCECOM101.

NOTE: Wiring diagrams for the Communicating Air Handler, Communicating Furnaces and Oil Furnace are on pages 14, 15-16 and 17 respectively.

The ◆ represents an alpha character.

Figure 38 Wiring Diagram



NOTE: The Black wire must be connected to chassis ground to ensure proper operation.

Air Handler may not have a Low Voltage Terminal board. Connect Electronic Air Cleaner wires to the Air Handler Low Voltage Color coded wires.

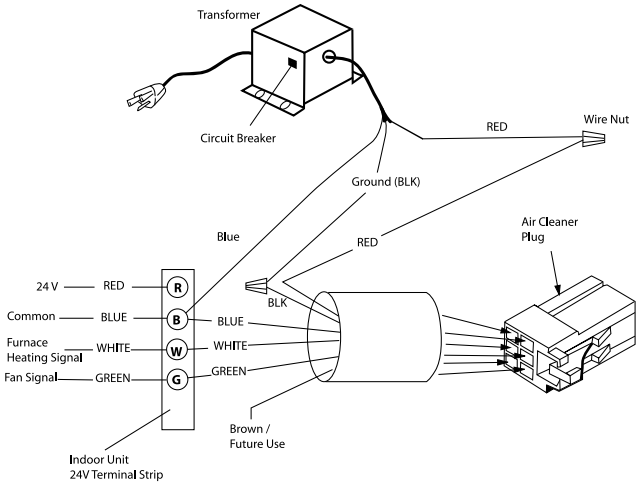
Install Transformer, one is supplied with the Electronic Air Cleaner, in the Furnace or Air Handler.

Figure 39 BAYTRANS12024◆ Transformer

- **Transformer must have a grounded 120 VAC power source. Do not defeat ground plug on the transformer.**
- **Mount transformer to building structure with the four provided wood screws.**

***NOTE: BAYTRANS12024A** with vendor's manufacturing date codes after 0625 (YYWW) cannot be installed in California because the transformer does not satisfy the requirements set forth by **California Code of Regulations, Title 20, Sections 1601 through 1608** dated December 2006.*

Transformer not applicable to 50 Hz units.



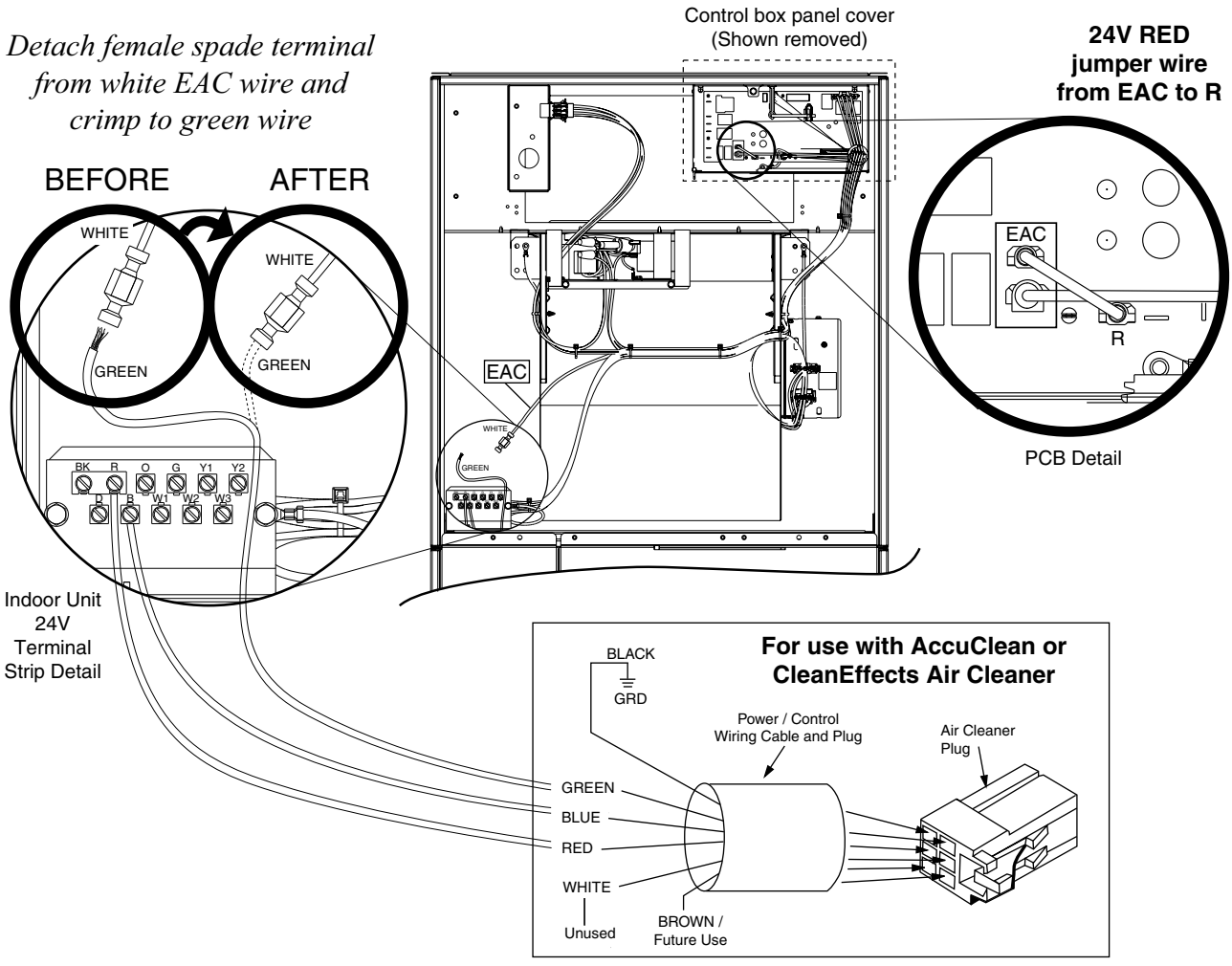
ELECTRICAL CONNECTIONS TO A COMMUNICATING SYSTEMS AIR HANDLER

⚠ WARNING

HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER, INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. FOLLOW PROPER LOCKOUT/TAGOUT PROCEDURES TO ENSURE THE POWER CAN NOT BE INADVERTENTLY ENERGIZED. FAILURE TO DISCONNECT POWER BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

PROCEDURE:

1) Remove electrical power going into the air handler.
2) On the communicating systems air handler, remove the blower access panel.
3) Remove the communicating control box cover.
4) Locate the red jumper wire which is attached from EAC to R on the Communicating Systems PCB. Confirm it is connected. If there is not a jumper wire installed, then one must be installed in this location in order for the air cleaner to function properly.
5) Replace the Communicating control box cover.
6) Locate the white wire coming from the Communicating System Air Handler PCB labeled "EAC". The wire will have a male spade terminal connected to it and a female spade terminal inserted into the male terminal. Remove the female spade terminal and crimp it to the green wire on the air cleaner harness.
7) Connect the green wire from the air cleaner harness to the white wire on the Communicating Systems Air Handler.
8) Using the wire harness supplied with the air cleaner, connect the Red and Blue wires from the air cleaner harness to "R" and "B" on the Indoor Unit 24V Terminal Strip respectively.
9) Connect the Black wire from the air cleaner wire harness to earth ground by attaching the wire to a grounded screw that is connected to the metal air handler chassis.
10) Replace the blower access panel.
11) Re-connect electrical power to the air handler.



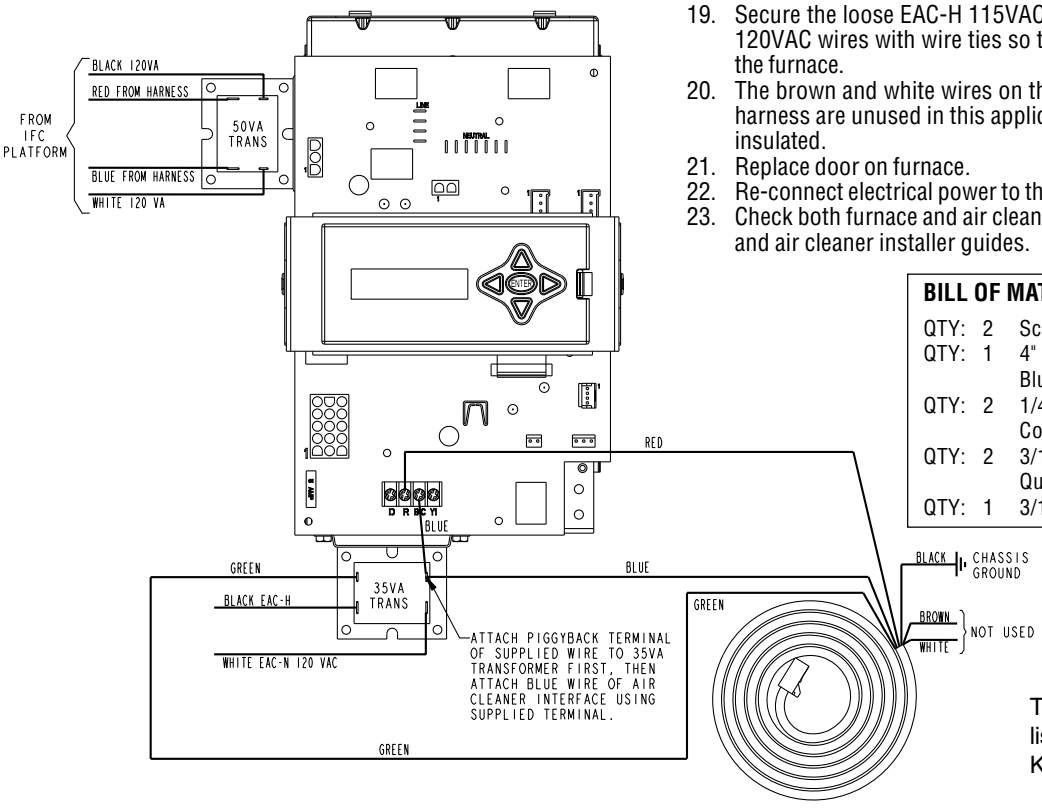
ELECTRICAL CONNECTIONS TO A COMMUNICATING SYSTEMS 3-STAGE FURNACE

⚠ WARNING

HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER, INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. FOLLOW PROPER LOCKOUT/TAGOUT PROCEDURES TO ENSURE THE POWER CAN NOT BE INADVERTENTLY ENERGIZED. FAILURE TO DISCONNECT POWER BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

PROCEDURE:

1. Remove electrical power going into the furnace.
2. Open blower door to upflow or downflow furnace.
3. Remove the two screws that secure the IFC platform to the underside of the blower deck on an upflow furnace or the three screws that secure the IFC to the top panel on a downflow furneace. Save these screws for remounting later.
4. Remove the IFC and platform from the upflow or downflow furnace.
5. Disconnect all wires on the 35VA transformer.
6. Remove the 35VA transformer from the IFC platform. Save the screws for 35VA transformer relocation.
7. Mount the 50 VA transformer supplied in the packaging with the air cleaner onto the IFC platform where the 35VA transformer was previously located. Use the sheet metal screws supplied with the air cleaner to mount the 50VA transformer. Re-connect the 115V and 24V wires that were connected to the 35VA transformer onto the 50 VA transformer.
8. On an upflow furnace, remount the 35VA transformer onto the underside of the IFC platform. Use existing holes and the original sheet metal screws that originally mounted the 35VA transformer. See diagram.
9. On a downflow furnace, mount the 35 VA transformer on the blower deck by drilling two 0.144 inch diameter (#27) holes 13/16" inches apart and attaching the transformer to the blower deck using the screws retained from step 3 above.
10. Remove the EAC-H 115VAC & EAC-N wires (white and black) out of the junction box and pull them through the grommet in the blower deck. Attach two supplied 1/4" insulated female quick connect terminals by stripping the wires and crimping the terminals onto the wires. Attach these wires to the 115V terminals of the 35VA transformer as shown in the diagram.
11. Connect the terminal to the 24V terminal on the 35VA transformer.
12. Remove the wiring harness supplied with the air cleaner from the packaging. Attach a supplied 3/16" insulated female quick connect terminal to the blue wire and to the green wire.
13. Attach the blue wire from the air cleaner wiring harness to the open tab on the piggyback terminal.
14. Insert the 4" blue stripped wire under the terminal strip screw marked "B/C" on the IFC control board.If the application also includes an outdoor unit (communicating or non-communicating), the B/C terminal will require three wires. For this connection, rather than connecting the three wires to the low voltage terminal strip on the furnace IFC, create a pigtail using a short length of thermostat wire and a wire nut (field supplied) to attach to the B/C terminal.
15. Connect the green wire from the air cleaner wire harness to the 24VA terminals of the 35VA transformer terminal as shown in the diagram (this terminal is labeled "RD" on the tranformer).
16. Insert the red stripped wire from the air cleaner wiring harness under the terminal strip screw marked "R" on the IFC Control board.
17. Attach the black stripped wire from the air cleaner wiring harness directly to ground with a screw in the chassis.
18. Once all of the connections have been completed, remount the IFC Control Platform into the furnace.
19. Secure the loose EAC-H 115VAC & EAC-N (black and white) 120VAC wires with wire ties so that they are not dangling in the furnace.
20. The brown and white wires on the air cleaning wiring harness are unused in this application and should be insulated.
21. Replace door on furnace.
22. Re-connect electrical power to the furnace.
23. Check both furnace and air cleaner operation per the furnace and air cleaner installer guides.



BILL OF MATERIALS:

QTY:	2	Screw
QTY:	1	4" Insulated Copper Wire – Blue (18 AWG, AWM)
QTY:	2	1/4" Insulated Female Quick Connect Terminal
QTY:	2	3/16" x 0.020" Insulated Female Quick Connect Terminal
QTY:	1	3/16" x 0.020" Receptacle & Tab

These instructions and listed parts are included in KIT# BAYACCECOMM101

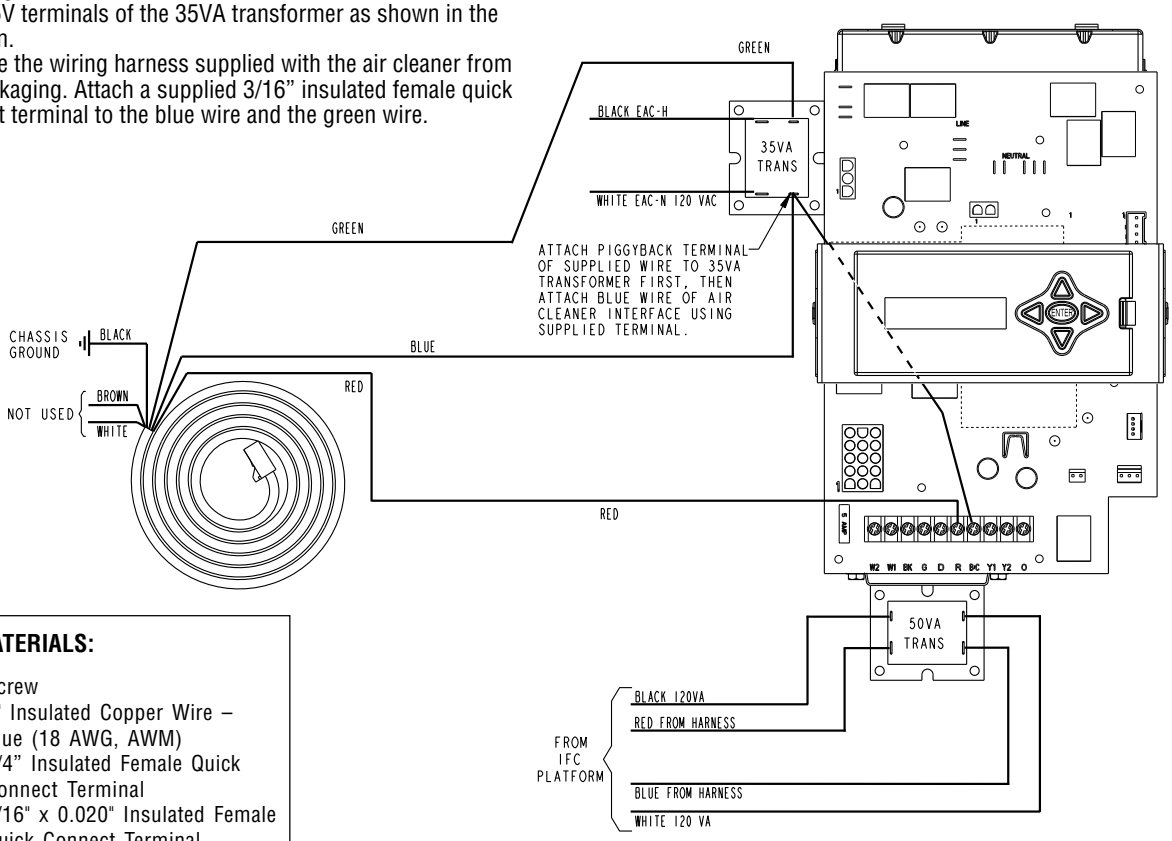
ELECTRICAL CONNECTIONS TO A COMMUNICATING 80% FURNACE

⚠ WARNING

HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER, INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. FOLLOW PROPER LOCKOUT/TAGOUT PROCEDURES TO ENSURE THE POWER CAN NOT BE INADVERTENTLY ENERGIZED. FAILURE TO DISCONNECT POWER BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

PROCEDURE:

1. Remove electrical power going into the furnace.
2. Remove blower door to up-flow or down-flow furnace.
3. Remove the two screws that secure the IFC platform to the underside of the blower deck on an up-flow furnace or the 3 screws that secure the IFC platform to the top panel on a down-flow furnace.
4. Carefully remove the IFC platform from the furnace.
5. On both the up-flow and down-flow furnaces, mount the 50VA transformer supplied in the packaging with the air cleaner onto the bottom of the IFC platform. Screws and pilot holes are provided. See figure.
6. Remove wiring from existing 35VA transformer and reconnect to the 50VA transformer. Note the polarity of the wires and reconnect to the appropriate terminals. See diagram
7. Remove the EAC-H 115VAC and EAC-N wires (white and black) out of the junction box and pull them through the grommet in the blower deck. Attach two supplied ¼" insulated female quick connect terminals by stripping the wires and crimping the terminals onto the wires. Attach these wires to the 115V terminals of the 35VA transformer as shown in the diagram.
8. Remove the wiring harness supplied with the air cleaner from the packaging. Attach a supplied 3/16" insulated female quick connect terminal to the blue wire and the green wire.
9. Attach the blue wire from the air cleaner wiring harness to the open tab on the piggyback terminal supplied in the BAYACCECOMM101. Attach piggyback terminal to the 35VA transformer terminal "C" (Common).
10. Insert the 12" blue stripped wire under the terminal strip screw marked "B/C" on the IFC control board. If the application also includes an outdoor unit (communicating or non-communicating), the B/C terminal will require 3 wires connected. For this connection, rather than connecting the three wires to the low voltage terminal strip on the furnace IFC, create a pigtail using a short length of thermostat wire and a wire nut (field supplied) to attach to the B/C terminal.
11. Connect the green wire from the air cleaner wiring harness to the 24V terminal on the 35VA transformer labeled "RD". See diagram.
12. Insert the red stripped wire from the air cleaner wiring harness under the IFC control board terminal screw marked "R". See diagram.
13. Attach the black stripped wire from the air cleaner wiring harness directly to ground with a screw on the furnace chassis. See diagram.
14. Once all of the connections have been completed, remount the IFC control platform into the furnace.
15. Secure any loose wiring with wire ties.
16. The brown and white wires from the EAC wiring harness are unused in this application and should be insulated. See diagram.
17. Replace the furnace door.
18. Re-connect electrical power to the furnace.
19. Check both furnace and air cleaner operation per the furnace and air cleaner installer guides.



BILL OF MATERIALS:

QTY:	2	Screw
QTY:	1	4" Insulated Copper Wire – Blue (18 AWG, AWM)
QTY:	2	1/4" Insulated Female Quick Connect Terminal
QTY:	2	3/16" x 0.020" Insulated Female Quick Connect Terminal
QTY:	1	3/16" x 0.020" Receptacle & Tab

These instructions and listed parts are included in KIT# BAYACCECOMM101

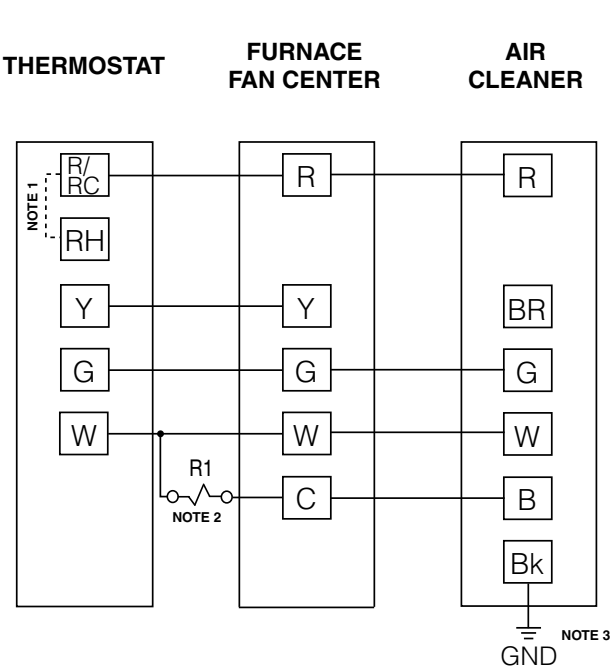
ELECTRICAL CONNECTIONS TO AN OIL FURNACE

⚠ WARNING

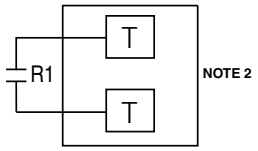
HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER, INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. FOLLOW PROPER LOCKOUT/TAGOUT PROCEDURES TO ENSURE THE POWER CAN NOT BE INADVERTENTLY ENERGIZED. FAILURE TO DISCONNECT POWER BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

Refer to the diagrams below for proper connections to an oil furnace. Consult the oil furnace installer's guide for additional information.

SINGLE STAGE OIL FURNACE TO AIR CLEANER



OIL BURNER PRIMARY

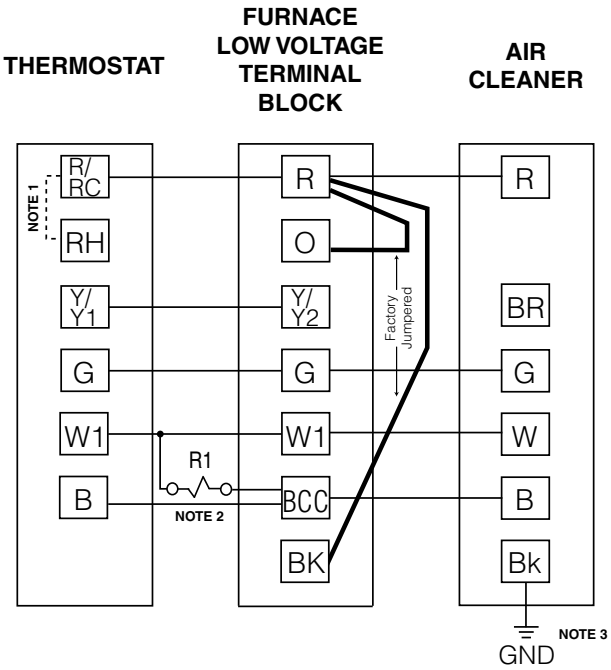


NOTE 1: If thermostat being used has separate RC and RH terminals, jumper RC and RH together.

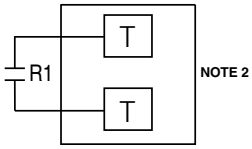
NOTE 2: Oil burner primary TT contacts must be isolated using field supplied relay (RLY00925) or equivalent.

NOTE 3: The black wire (Bk) from ACCE unit must be connected to chassis ground to ensure proper operation.

VARIABLE SPEED OIL FURNACE TO AIR CLEANER



OIL BURNER PRIMARY



NOTE 1: If thermostat being used has separate RC and RH terminals, jumper RC and RH together.

NOTE 2: Oil burner primary TT contacts must be isolated using field supplied relay (RLY00925) or equivalent.

NOTE 3: The black wire (Bk) from ACCE unit must be connected to chassis ground to ensure proper operation.

F. AIR CLEANER OPERATION AND SET UP

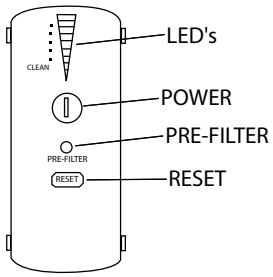


Figure 40 LED Display

⚠ CAUTION

Do NOT operate the air cleaner during construction or remodelling of a home. The air cleaner is designed for use in normal living conditions to capture small particles. The volume of dust and condensate in the presence of chlorides and fluorides from paint, varnish, stains, adhesives, cleaning compounds, and cement creates a corrosive condition which may cause rapid deterioration of the cabinet and internal components of the air cleaner and the air handler/ furnace.

DISPLAY FEATURES (Figure 40)

The air cleaner display can be used for several functions:

- Provide the homeowner the operating status of the air cleaner, including an indication the PRE-FILTER or COLLECTION CELLS need cleaning.
- The installer accesses the Set-Up Mode to change the time to clean settings for the PRE-FILTER and COLLECTION CELLS as well as change the Power Level setting.
- The unit will display fault codes for the homeowner indicating there is a problem with the air cleaner and various fault codes for the service technician to assist in troubleshooting the problem.

Turn the air cleaner on by pushing the POWER button. The backlit POWER and filter RESET buttons will illuminate along with the first Green LED **(G1)** indicating 24 Volt power is present to the air cleaner.

When the indoor fan is operating the first LED **(G1)** will slowly flash. This indicates the FIELD CHARGER and COLLECTION CELLS have power and the unit is operating normally. There is a ten minute time delay between the indoor fan starting and LED **(G1)** flashing.

In normal operation, the air cleaner makes a slight sound as the air passes through it and is cleaned. In some applications, you may notice this sound coming from the return air vent(s). If desired, this sound level can be reduced with minimal impact on air cleaning efficiency by reducing the power setting of the FIELD CHARGER in the Set-Up Mode.

NOTE: There is a 10 minute delay after the indoor fan operates, before the air cleaner starts to operate, each time the power to the air cleaner is turned off/on. This can be bypassed by going into and then out of the Set-Up mode.

G. SET-UP MODE

A combination of RED, YELLOW, and GREEN LED's are used to indicate the following settings. See Figure 41.

- The three GREEN LED's are used to indicate PRE-FILTER cleaning interval. This is measured in actual run time of the indoor fan. The default setting is 2 months. See Figure 42.
- The four YELLOW LED's indicate the COLLECTION CELL cleaning interval. This is measured in actual run time of the indoor fan. The default setting is 6 months. See Figure 43.
- The three RED LED's indicate the power level setting. The default is maximum. See Figure 44.

INSTALLER SET-UP MODE

To enter the Installer Set-Up Mode press and hold both the POWER and RESET buttons for a minimum of 5 seconds. The current settings are then displayed. See Figure 40. If this is the desired setting or at any time you want to exit the Set-Up mode, press and hold BOTH the POWER and RESET buttons for a minimum of 5 seconds to exit.

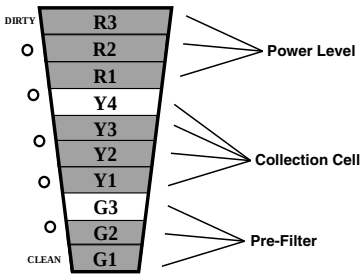


Figure 41 Factory Settings

PRE-FILTER SETTING (Figure 42)

To change any of the settings, press the POWER button once.

One or more of the GREEN LED's will come on indicating the PRE-FILTER cleaning time setting. Repeatedly press the RESET button to cycle through the time options for the PRE-FILTER cleaning cycle until the desired setting is displayed. Press the POWER button once to accept that setting and move to the COLLECTION CELL cleaning settings.

1 Month 2 Months* 3 Months

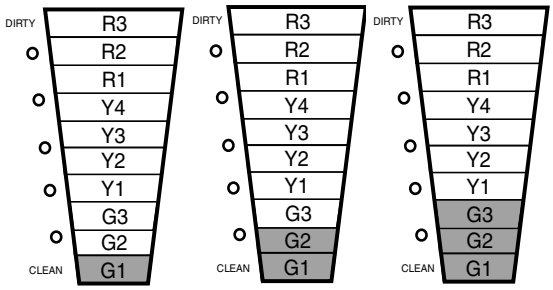


Figure 42 Green LED Pre-Filter Settings

* Factory Setting

CELL CLEANING SETTING (Figure 43)

One or more of the YELLOW LED's will come on indicating the COLLECTION CELL cleaning time setting. Repeatedly press the RESET button to cycle through the time options for the COLLECTION CELLS cleaning cycle until the desired setting is displayed. Press the POWER button once to accept that setting and move to the power settings.

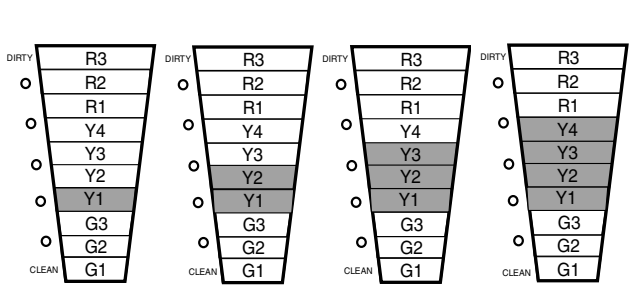


Figure 43 Yellow LED COLLECTION CELL Settings

*Factory Setting

FIELD CHARGER POWER LEVEL

The RED LED lights are used to set the power level of the FIELD CHARGER for maximum, medium, or minimum. The number of illuminated RED LED lights indicates the current setting. The factory setting is for maximum.

Lower settings will reduce the slight sound emitted by the unit with minimal loss of air cleaning efficiency, if desired. Lower settings will also further reduce the very low ozone produced by the air cleaner. The U.S. Food and Drug Administration recommends indoor ozone concentrations should not exceed 50 parts per billion. Your air cleaner will contribute only 5 parts per billion at the factory setting and can be reduced to 3 parts per billion at the minimum setting.

FIELD CHARGER POWER LEVEL SETTINGS (Figure 44)

One or more of the RED LED lights will illuminate. To change the Power Level setting, press the RESET button until the desired setting is indicated.

To save your new settings and exit the Set-Up mode, press and hold BOTH the POWER and filter RESET buttons for a minimum of 5 seconds.

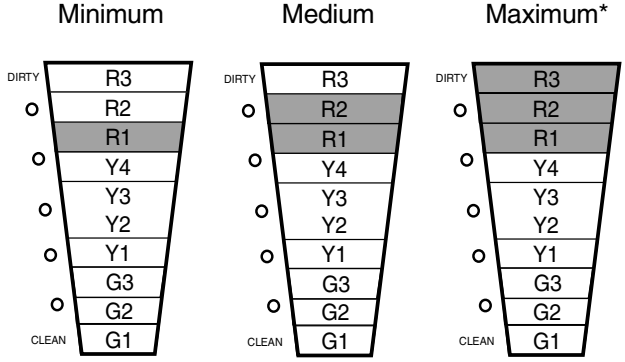


Figure 44 Red LED Power Level Settings

*Factory Setting

H. MAINTENANCE

⚠ CAUTION

Before cleaning the coil or ducts in the air handler or furnace, remove the COLLECTION CELLS, FIELD CHARGER, and PRE-FILTER from the air cleaner. Chemicals used during the cleaning of the air handler, furnace, or ductwork can damage the air cleaner components and degrade the performance of the air cleaner.

For maximum efficiency, the COLLECTION CELLS and PRE-FILTER should be inspected and cleaned as prescribed in this Installer's Guide.

The FIELD CHARGER should only be removed and cleaned annually by a qualified service professional.

CLEANING

Cleaning Instructions:

The air cleaner utilizes a PRE-FILTER and COLLECTION CELLS. The purpose of the PRE-FILTER is to capture large particles before they enter the COLLECTION CELLS which allows the COLLECTION CELLS to work more efficiently.

1. Turn the air conditioning system off at the Comfort Control (thermostat).

⚠ WARNING

High Voltage is present within the air cleaner for operation. Before removing the Power Door, turn the power off and wait at least 15 seconds to allow voltage to discharge. Failure to follow instructions could result in death or serious personal injury.

2. Turn off power to the air cleaner by pushing and holding the POWER button for three seconds. The LED's will remain on until the voltage has discharged and it is safe to remove the door. This requires approximately 15 seconds. **Do not remove the door until all the lights are off.**
3. Disconnect the power/control cable.
4. Rotate the two latches and remove the door as shown in Figure 45. Place the door in a secure location.

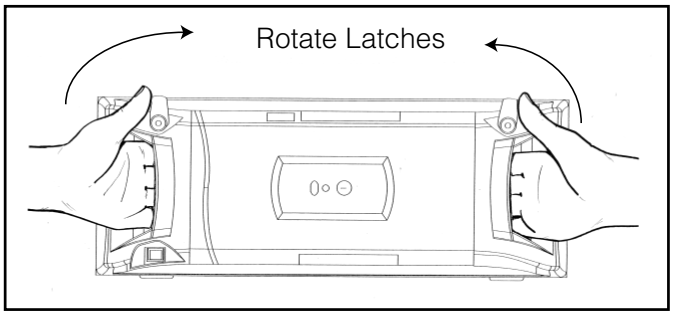


Figure 45 Rotating Door Latches

5. Remove the PRE-FILTER (Figure 46) and/or the COLLECTION CELLS (Figure 47) from the air cleaner.

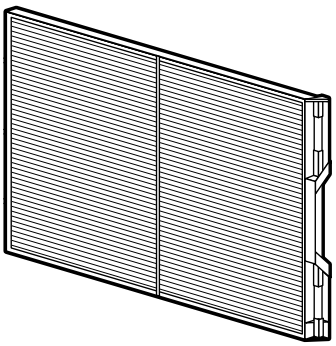


Figure 46 Pre Filter

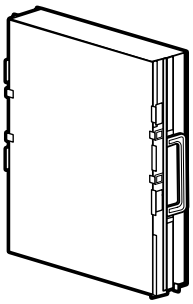


Figure 47 Collection Cells

VACUUM CLEANING

Vacuuming is the preferred method to clean the PRE-FILTER and COLLECTION CELLS. It is recommended that the PRE-FILTER and the COLLECTION CELLS be vacuumed outside the home to ensure particles on the filters are not re-introduced into the air. Persons highly sensitive to the collected particles should wear appropriate respiratory protection while cleaning.

PRE-FILTER –
It is time to clean the PRE-FILTER when the red "PRE-FILTER" light (shown in Figure 48) is illuminated.

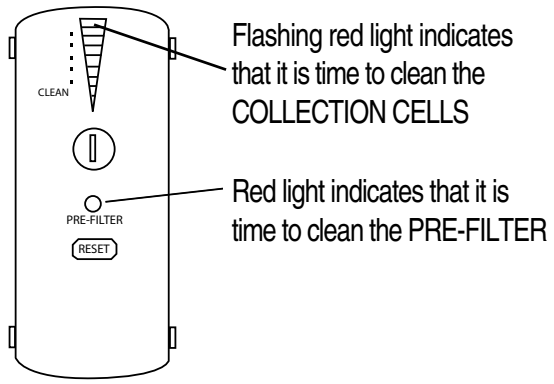

CLEAN
PRE-FILTER
RESET
Flashing red light indicates that it is time to clean the COLLECTION CELLS
Red light indicates that it is time to clean the PRE-FILTER

Figure 48 Pre-Filter Light

The air cleaner is factory set to notify the home owner to clean the PRE-FILTER every two months of actual run time of the air cleaner. This notification can be changed by the installer/home owner to 1 month or 3 months depending on the conditions in the home (pets, smokers, etc.). Please see "SET-UP MODE" (Page 18) to change the factory settings.

1. Using a vacuum hose, vacuum in even strokes across the length of the PRE-FILTER. After vacuuming the entire PRE-FILTER using even strokes going in one direction, repeat the process using even strokes going in the opposite direction as shown in Figure 49.

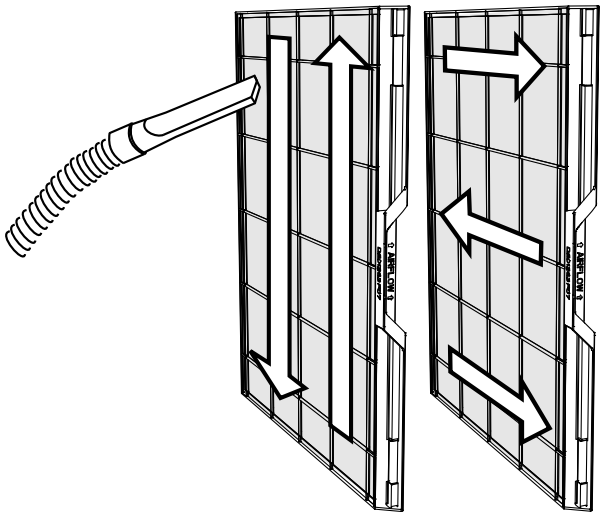


Figure 49 Vacuuming the Pre-Filter

NOTE: Do NOT replace the plastic PRE-FILTER with a metal type PRE-FILTER. A metal PRE-FILTER will cause reduction in efficiency and potential failure of the electronics in the air cleaner.

COLLECTION CELLS
The clean/dirty LED light bar indicator will illuminate as the system cleans the air. The LED lights will progress from green to yellow and then to red. When the last red indicator is flashing, it is time to clean the COLLECTION CELLS (see Figure 47). The air cleaner is factory set to notify the home owner to clean the COLLECTION CELLS every six months of actual run time of the air cleaner. This notification can be changed by the installer/home owner to 2 months, 4 months, 6 months, or 9 months depending on the conditions in the home (pets, smokers, etc.). Please see "SET-UP MODE" (Page 18) to change the factory settings.

1. Using a vacuum hose, vacuum in even strokes across the entire COLLECTION CELL surface. Vacuum using even strokes in one direction, then repeat the process using even strokes in the opposite direction, as demonstrated in Figure 50 below.

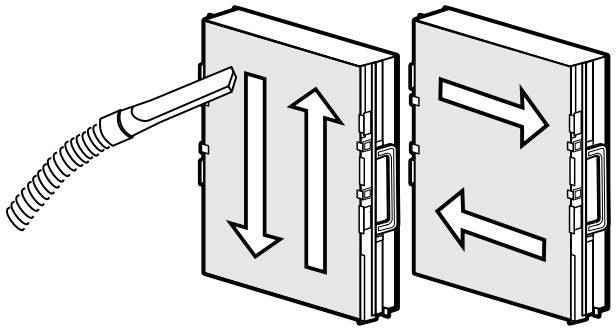


Figure 50 Vacuuming the Collection Cells

2. Once vacuuming is completed on one side of the COLLECTION CELL, turn the COLLECTION CELL over and repeat on the other side of the COLLECTION CELL.

NOTE: It is normal for COLLECTION CELLS to discolor during operation. Vacuuming will not restore the COLLECTION CELLS to their original color. However, vacuuming does restore the COLLECTION CELLS to a high efficiency.

REPLACING THE PRE-FILTER AND COLLECTION CELLS INTO THE AIR CLEANER

1. Replace the PRE-FILTER into the air cleaner. Ensure that the "AIRFLOW indicator arrow" on the PREFILTER is pointing in the same direction as the "AIRFLOW indicator arrow" on the air cleaner cabinet as shown in Figure 51.

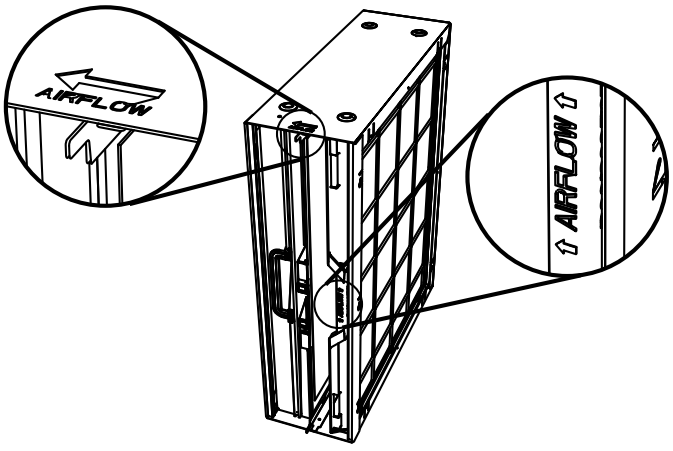


Figure 51 Airflow Direction

2. Reinstall the COLLECTION CELLS into the air cleaner. Ensure the handles on both of the COLLECTION CELLS are folded flat as shown in Figure 52.

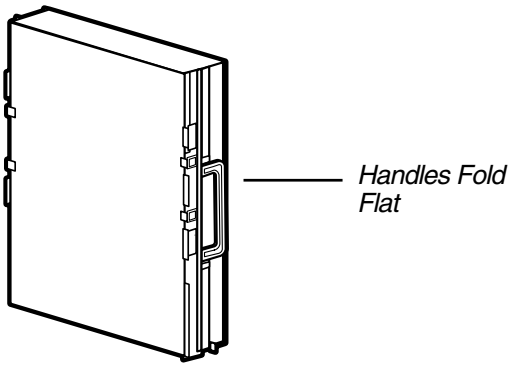


Figure 52 Collection Cell, Handle Folded

3. Replace the power door onto the air cleaner.

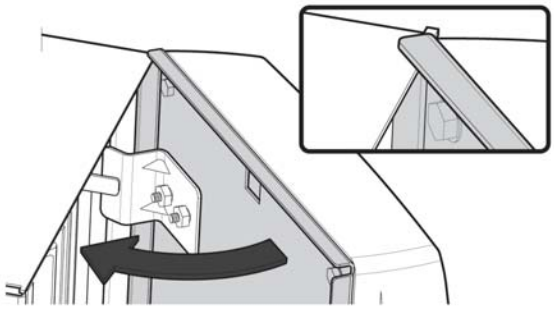


Figure 53 Reinstalling Power Door

4. Ensure the power cord is plugged into the air cleaner.

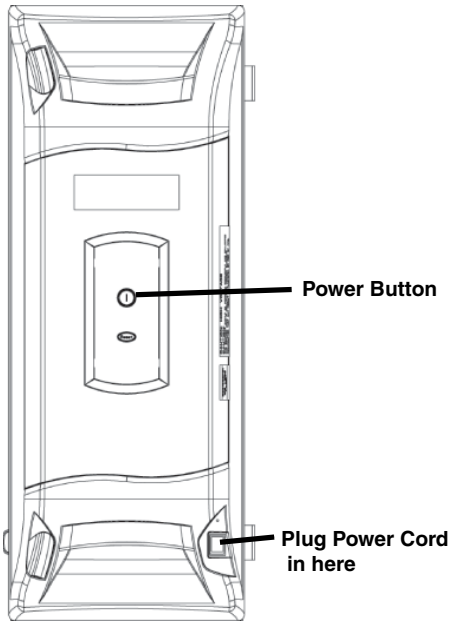


Figure 54 Pressing Power Button

5. Press the power button to turn on the air cleaner.

NOTE: Once you press the power button, the first LED will be on and it will start flashing after the first 10 minutes of indoor fan operation. This is normal operation.

Alternate Cleaning option for homeowners with 200 or 200-1 COLLECTION CELLS ONLY
Vacuuming the PRE-FILTER and COLLECTION CELLS restores them to a high efficiency. However, some environmental conditions, like tobacco smoke, cause the COLLECTION CELLS to need to be washed with water. Washing the COLLECTION CELLS is acceptable ONLY if the COLLECTION CELL has a "200/200-1" embossed or written on the frame in the vicinity of the manufacturing part number:

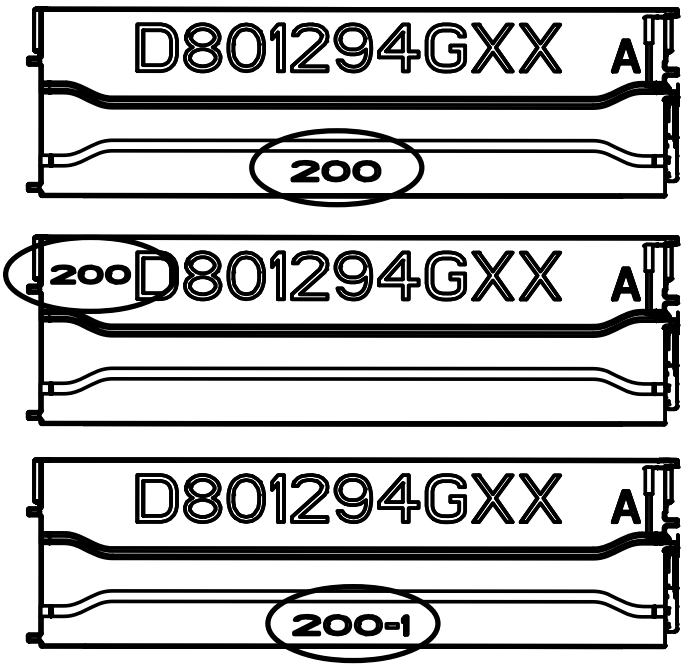


Figure 55 Collection Cell Identification

Carefully review **BOTH** of the COLLECTION CELLS for the "200/200-1" mark. If the "200/200-1" mark is visible on BOTH COLLECTION CELLS, they may be washed. If the "200/200-1" mark is NOT visible, the COLLECTION CELLS **cannot** be washed.

⚠ CAUTION

Washing COLLECTION CELLS that do NOT have the "200/200-1" mark on them can result in degradation of the air cleaner system. Failure to follow instructions could result in property damages.

1. If the COLLECTION CELLS do have the "200/200-1" mark on them, they may be washed using a low pressure water spray, such as a sink sprayer or garden hose. Stubborn residue like tobacco smoke may require warm water to be removed.

- **Do NOT use soap or detergent in cleaning the COLLECTION CELLS.**
- **Do NOT immerse the COLLECTION CELLS completely in water.**
- **Do NOT place the COLLECTION CELLS into a dishwasher to clean.**
- **ALLOW THE COLLECTION CELLS TO DRY THOROUGHLY BEFORE INSTALLING.**

2. After washing, drain as much water as possible from the COLLECTION CELLS.
3. Holding the sides of the COLLECTION CELLS, gently tap the cells on a flat surface to dislodge any water droplets inside the COLLECTION CELLS. After tapping, wipe down the surfaces of the COLLECTION CELLS to remove any visible droplets of water.

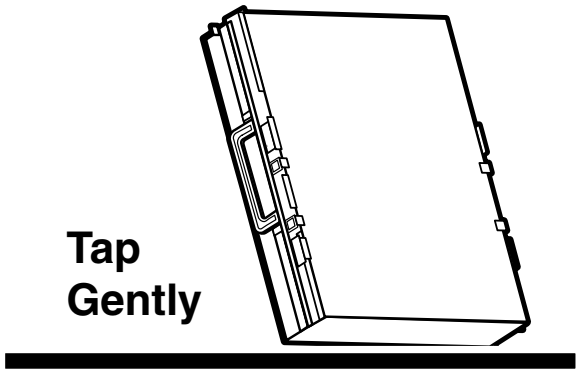


Figure 56 Collection Cell

4. When there are no visible water droplets left in the COLLECTION CELLS, reinstall them into the air cleaner cabinet. Be sure to fold the COLLECTION CELL handles flat as shown in Figure 57.

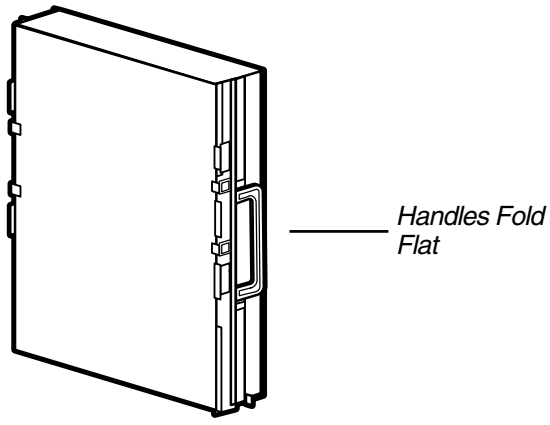


Figure 57 Collection Cell, Handle Folded

5. Replace the door onto the air cleaner cabinet (see Reinstalling the Power Door, page 5).

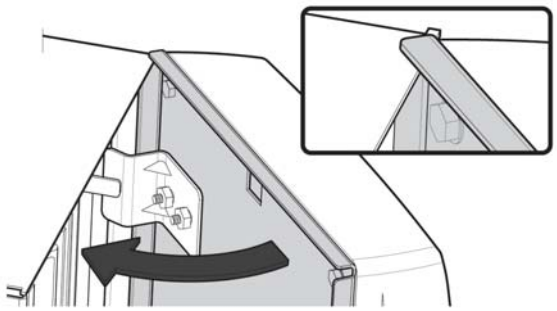


Figure 58 Reinstalling the Power Door

6. Ensure that the power cord is connected to the air cleaner and press the power button.

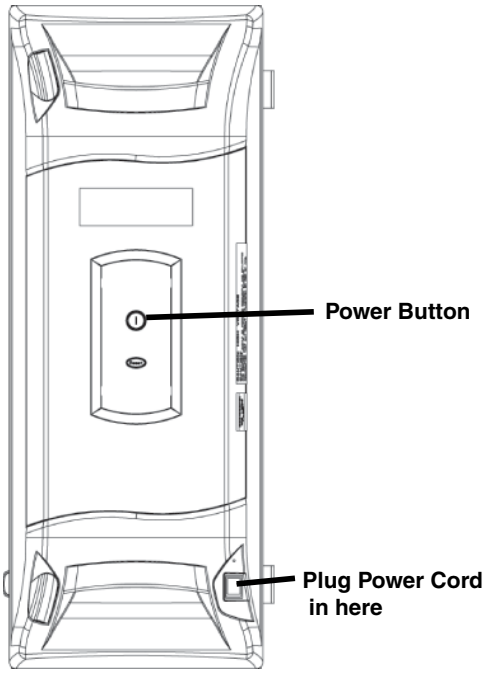


Figure 59 Pressing the Power Button

NOTE: Once you press the power button, the first LED will be on and it will start flashing after the first 10 minutes of indoor fan operation. This is normal operation.

7. On the thermostat, reset the indoor fan operation to the desired mode. Turn the air system back on at the Comfort Control (thermostat).

NOTE: The field charger should never be subjected to water. The field charger should only be cleaned by a trained service professional.

NOTE: The pre-filter may also be washed ONLY if the COLLECTION CELLS show a "200/200-1". Follow the same instructions to wash the PRE-FILTER - being sure to tap gently and wipe off any visible water droplets.

ADDITIONAL MAINTENANCE

RESET TIMERS

To reset the PRE-FILTER timer, press and hold the RESET button until the PRE-FILTER LED turns off. (1 to 2 seconds)
To reset the Collection Cell timer, press and hold the RESET button until the COLLECTION CELL LED's turn off. (4 to 5 seconds)

FAULT CODES

The air cleaner LED's will display a fault indication, three Yellow or three Red LED's, when a fault has been detected. A log of the last three faults is recorded and can be accessed by going into the Set-Up mode. The unit will repetitively check the system to determine if the fault persists. The fault indication will be displayed as long as the fault condition remains.

If the fault is no longer present, the system will return to normal operation and no longer display the fault indication. Even if the fault has been cleared, a log of the last 3 faults is recorded.

REPETITIVE ARC FAULT INDICATION

If the unit detects 10 consecutive run cycles where an arc occurs during the cycle, it will go into a lock out period for one hour. This is indicated by three FLASHING YELLOW LED's. The PRE-FILTER and COLLECTION CELLS should be cleaned to ensure no large material is trapped in the filters and causing the fault. Check the FIELD CHARGER for material that can cause the fault.

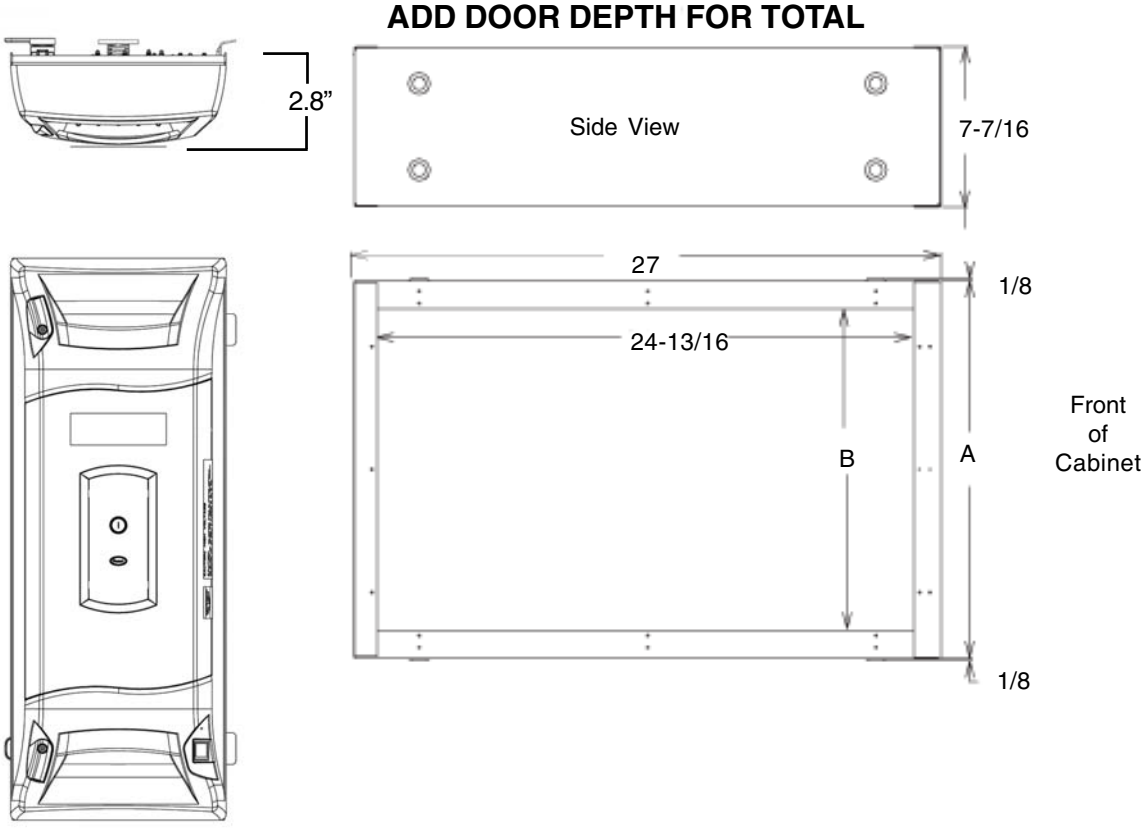
If the unit detects any other type of fault, this will be indicated by three FLASHING RED LED's. See the Service Facts for fault code information.

I. OUTLINE DRAWINGS

DIMENSIONS

OUTLINE DRAWING FOR UPFLOW FURNACES

27" DEPTH CABINET
ADD DOOR DEPTH FOR TOTAL

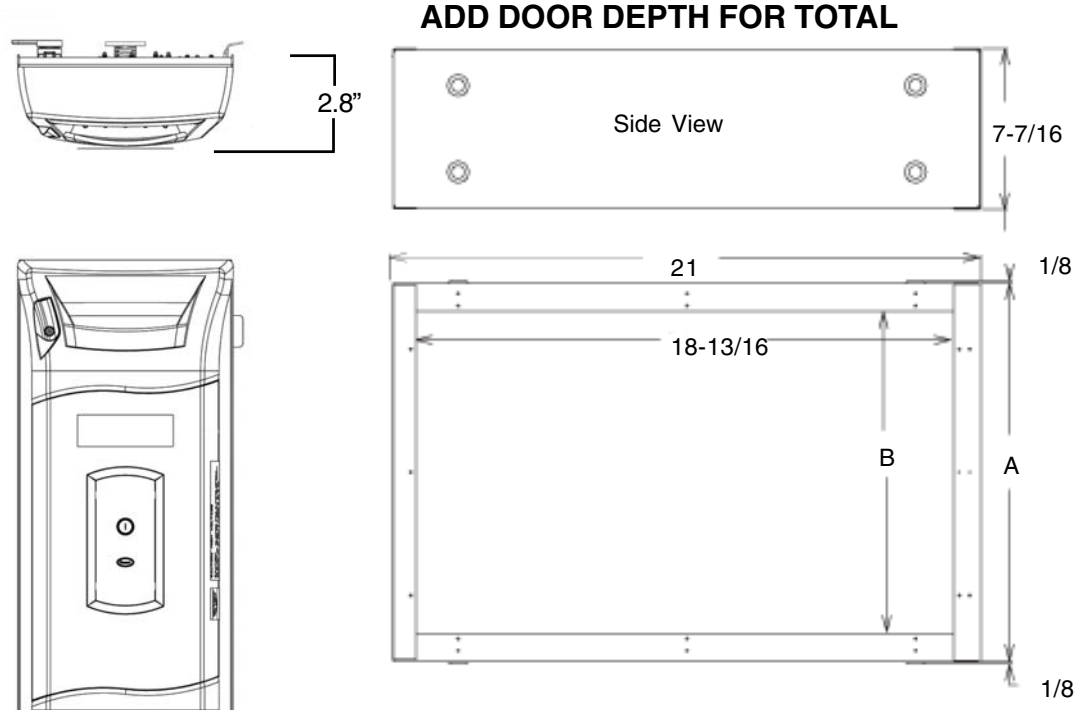


UPFLOW FURNACE MODEL NUMBERS			
ifD Air Cleaner	**A**	**B (multiple piece cabinet)**	**B (one piece cabinet)**
*FD145ALUPGRDC	14.5	11.9	12
*FD175ALUPGRDC	17.5	14.9	15
*FD210ALUPGRDC	21.0	18.4	18.5
*FD245ALUPGRDC	24.5	21.9	22
* May be "A" or "T"			

DIMENSIONS

OUTLINE DRAWING FOR DOWNFLOW FURNACES

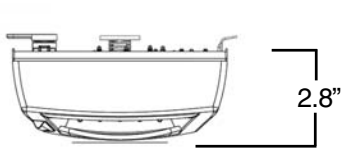
21" CABINET DEPTH
ADD DOOR DEPTH FOR TOTAL

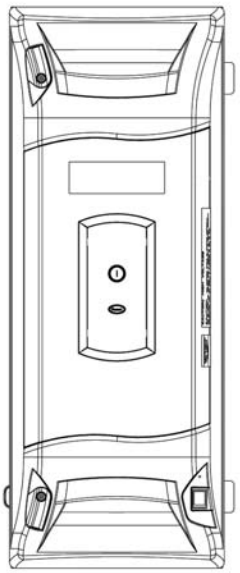


DOWNFLOW FURNACE MODEL NUMBERS			
ifD Air Cleaner	**A**	**B (multiple piece cabinet)**	**B (one piece cabinet)**
*FD14DALUPGRDC	14.5	11.9	12
*FD17DALUPGRDC	17.5	14.9	15
*FD21DALUPGRDC	21.0	18.4	18.5
*FD24DALUPGRDC	24.5	21.9	22
* May be "A" or "T"			

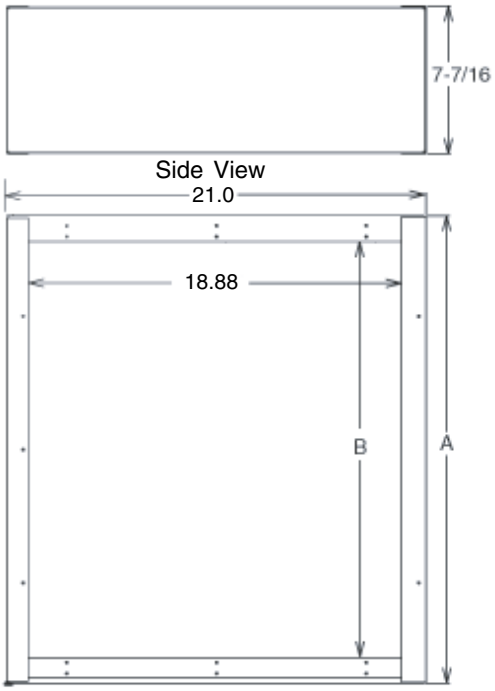
DIMENSIONS

OUTLINE DRAWING FOR AIR HANDLERS





21” DEPTH CABINET
ADD DOOR DEPTH FOR TOTAL



AIR HANDLER MODEL NUMBERS			
ifD Air Cleaner	**A**	**B (multiple piece cabinet)**	**B (one piece cabinet)**
*FD215ALUPGRDC	21.5	18.9	19
*FD235ALUPGRDC	23.5	20.9	21
*FD260ALUPGRDC	26.0	23.4	23.5
* May be "A" or "T"			

J. PRESSURE DROP INFORMATION

PRESSURE DROP AT SPECIFIC AIRFLOW PER MODEL									
	400 CFM	600 CFM	800 CFM	1000 CFM	1200 CFM	1400 CFM	1600 CFM	1800 CFM	2000 CFM
*FD145ALFR000C *FD145ALUPGRDC	0.06	0.10	0.16	0.23	0.30				
*FD175ALFR000C *FD175ALUPGRDC	0.05	0.08	0.12	0.17	0.22	0.28	0.34		
*FD210ALFR000C *FD210ALUPGRDC	0.04	0.06	0.09	0.12	0.15	0.20	0.24	0.29	0.34
*FD245ALFR000C *FD245ALUPGRDC	0.03	0.04	0.06	0.09	0.12	0.15	0.19	0.22	0.26
*FD14DALFR000C *FD14DALUPGRDC	0.09	0.16	0.24	0.34	0.46				
*FD17DALFR000C *FD17DALUPGRDC	0.07	0.11	0.18	0.25	0.33	0.42			
*FD21DALFR000C *FD21DALUPGRDC	0.05	0.09	0.13	0.18	0.23	0.29	0.37		
*FD24DALFR000C *FD24DALUPGRDC	0.04	0.07	0.11	0.14	0.19	0.24	0.30	0.36	0.43
*FD215ALAH000C TFD215ALAH005C *FD215ALUPGRDC	0.04	0.08	0.12	0.17	0.24				
*FD235ALAH000C TFD235ALAH005C *FD235ALUPGRDC	0.06	0.09	0.13	0.18	0.23	0.29	0.35		
*FD260ALAH000C TFD260ALAH005C *FD260ALUPGRDC	0.04	0.07	0.10	0.14	0.18	0.23	0.28	0.34	0.39

* May be "A" or "T"

Installer's Guide

12/08

Trane
6200 Troup Hwy.
Tyler, TX 75707

For more information contact your local dealer (distributor)

The manufacturer has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice.